REMARKS

The drawings are amended, per the attached Submission of new Fig. 11, to overcome the Examiner's objections. New formal drawings, incorporating the requested amendments, will follow once the requested drawing amendments are approved by the Examiner. If any further amendment to the drawings of this application is believed necessary, the Examiner is invited to contact the undersigned representative of the Applicant to discuss the same. Support for this added figure can be found on the last paragraph on page 18 through the first paragraph on page 19 of the present specification. Since this figure is merely a diagrammatic representation of the color generating devices no new subject matter is believed entered thereby.

Accompanying this response, please find replacement paragraphs and marked-up paragraphs of the specification which overcome some informalities noted in the specification on file. The undersigned avers that the enclosed replacement paragraph(s) of the specification do not contain any new matter.

Claims 38-41, 45, 47, 59-63 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons noted in the official action. The rejected claims are accordingly rewritten as new claims 73-83, and the presently pending claims are now believed to particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming all of the raised § 112, second paragraph, rejections.

Claims 38-41, 59 and 60, now claims 73-83 are rejected, under 35 U.S.C. § 102(b), as being anticipated by Verderber `611. The Applicant acknowledges and respectfully traverses the raised anticipatory rejection in view of the following remarks.

Verderber `611 is particularly different from the present invention and is specifically concerned with providing a hand held light "....having the ability to dissipate substantial heat generated by a high intensity light source and which does not become uncomfortable to grip during use". Verderber `611 achieves his desired cooling requirement by providing (see in particular Fig.. 2) a handle comprising a body 12 with a wall containing slots 17. The body 12 is spaced from heat sink 30 which shrouds lamp 40.

In addition, Verderber `611 provides a light rod 32 extending from the (conventional) lamp 40 to illuminate the shank portion 18a of a mirror 18 so that an area viewed by way of the mirror 18 is illuminated by light from the lamp 40. To ensure proper dissipation of heat, the light rod 32 is mounted within a tubular heat sink 30b. Another heat sink 30 also extends over the lamp 40 and mounting. The light receiving end of the light rod 32 is not optically coupled to the lamp but is merely juxtaposed and spaced from the conventional lamp 40. Verderber `611 does not disclose, teach or suggest that the efficient optical coupling of the lamp 40 with the rod 32 is a significant matter and does not seek to provide for controlled location of the light generating source in the lamp relative to the rod.

In addition to the conventional lamp 40 having a filament being mounted in a closure, or bulb, with a curved front (which does not complement the inner end shape of the light rod 32) the lamp 40 is mounted in a part of the heat sink having a diameter substantially greater than that of the heat sink surrounding the light rod. Consequently the outside diameter of the lamp 40 is not identical with that of the light rod 32 and so leakage paths for light from the lamp exist which further reduce the efficiency of transmission of light into the light rod 32.

As the Examiner is aware, in order to properly support a rejection under 35 U.S.C. § 102(b), the applied reference must disclose each and every limitation of the presently claimed invention. The Applicant, after making a thorough study of the `611 reference can find no such elements as specifically claimed in the presently pending claim 73, namely ".....the light conducting element being aligned co-axially with the element for emitting light; the transverse width of the light conducting element being similar to the transverse width of the containment;... " In fact due to the coupling of the smaller width light conducting element, rod 32 with the larger width conventional bulb 40, in the reference, such a similar width across the disclosed article is particularly impossible.

Claims 84-89 are provided to further clarify the subject matter of the present invention. Turning to new claim 84, the applicant find no disclosure, suggestion or teaching which shows either expressly or inherently the specifically claimed features of ".....a contiguous sleeve defining a communicating light source containment portion and a light wave conducting portion,

the sleeve having an axial length and a substantially constant radial width defined about a longitudinal axis;..... ". Additionally, there is no disclosure with respect to the recited features in claim 84 of, ".....a first end of the plenum defined by a light receiving surface of the light wave conducting portion, the light receiving surface of the light wave conducting portion receives light directly from the light source and passes the light along the axial length of the light wave conducting portion to a light output." As is readily apparent in Verderber `611, the plenum is defined by a conventional bulb containment of the filament situated within the heat sink 30. Therefore, in view of the above remarks and claim amendments the Applicant respectfully requests the withdrawal of the anticipation rejections.

The present invention is primarily concerned with efficient coupling between a "lamp" and a "light rod" and achieves this by including the light rod as an integral part of the housing of the lamp. It also eliminates end leakage paths for light from the lamp by providing a common profile for the junction between the lamp enclosure and the light rod.

In view of the fact that the respective independent claims namely 73 and 84 are now believed allowable, independent claims 45, 47 and 61, (now claims 77, 78 and 81), as well as corresponding new claims 88 and 89, are believed allowable as well.

Method claims 62 and 63, now claims 82, 83 are rejected, under 35 U.S.C. § 103(a), as being unpatentable over Verderber `611, while claim 47 is rejected over Verderber `611 in view of Ghandehari `275 and Cecil, Jr. `637. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the following remarks.

As the Examiner is aware in order to properly support an obviousness rejection under 35 U.S.C. § 103(a), the cited art must provide some teaching, suggestion which would lead one of ordinary skill in the art to combine the references as suggested by the Examiner. The applicant has made a thorough study of these references and can find no such teaching or suggestion as required by case law that would lead one of skill in the art to combine the references.

Ghandehari `275 is cited over Verderber `611 against claim 47 (new claim 78) the only one to mention color. Ghandehari `275 shows a device for illuminating a fiber optic cable.

It requires an elaborate assembly involving the use of heat removal by a heat sink and ventilation. There is no teaching with respect to why the hand tool of Verderber `611 could resonably be expected to require a color changing capability and certainly not one of the type disclosed by Ghandehari `275. Likewise, it is not clear how, or indeed why, the elaborate assembly of Ghandehari `275 could be associated in any practical form with the light outputting device of the present invention.

Cecil `637 is cited over Verderber `611 against method claim 61 (new claim 81). This shows the use of a gasket to support a lamp in an optimum position relative to the input surface of a fiber optic cable. However, even if a combination of these references is proper, and such is not conceded, the combination would still fail to teach or disclose the presently claimed invention, namely, as recited in claim 81, the steps of, ".....forming the light input region at the opposite end face of the light conducting element causing the sleeve member to be contiguously juxtaposed with the outer surface of the light conducting element; locating the element for emitting light in the length of sleeve projecting beyond the opposite end face;.....". Therefore, the Applicant respectfully requests withdrawal of the obviousness rejections.

The present invention is concerned with a light outputting device wherein the lamp and light conducting element are manufactured as a unit. It may well be that the light outputting device of the present invention is used to feed, at the end of the light conducting element remote from the lamp, a fiber optic cable. However, the present invention enables this to be done far more readily than would be possible with Cecil `637.

In view of the foregoing, it is respectfully submitted that this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

PAGE 10, BETWEEN 1st & 2nd PARAGRAPHS

Figure 11 is a diagrammatic representation of the colored vicinity of the present invention.

PAGE 18, LAST PARAGRAPH THROUGH PAGE 19, 1st PARAGRAPH

In other embodiments the device of the present invention can be used in combinations where the, or each, device is optically coupled by way of its light conducting member or members to one or more optical system. By way of example, as shown in Fig. 11 a small lighting unit 100 is envisaged made up of three devices 101, 103 and 105 according to the present invention each utilising a primary light with two light conducting members 107, 109, 111, 113, 115 and 117 extending therefrom. Each device 101, 103 and 105 serves to generate a primary colour (one red, one blue, one yellow) one of the two light conducting in each case is fused into a single central member 119 so that with the three devices 101, 103 and 105 powered up the three primary colours are mixed in the central member 119 to provide a white output. The remaining single light conducting member 107, 111, 117 from each device 101, 103 and 105 is kept separate so that at the optical outlet from the unit 100 there are four light outputs, 119, 107, 113, and 117, the central white and single red, blue and yellow output. Such as device can be made in a small envelope and provide a range of illuminating functions.

~~38~~**73**. ~~-~~**(NEW)** A light outputting device comprising:

a containment for housing an element for emitting light, the containment having a longitudinal axis and a ~~width~~ transverse ~~of~~**width defined ab ut** the longitudinal axis;

a light conducting element **communicating with and** extending ~~axially from~~**co-axially with** the containment ~~and~~**, the light conducting element** having an axial length substantially greater than ~~the~~**a** transverse ~~-~~width;

the light conducting element being aligned co-axially with the element for emitting light ~~in~~; the ~~containment by means of the containment or an extension thereof;~~ ~~the~~**transverse** width of the light conducting element being similar to the transverse width **of the containment**; and the light conducting element having a light input region whereby light generated by the element is enabled to pass axially into the light conducting element.

~~39~~**74**. ~~-~~**(NEW)** The light outputting device according to claim ~~38~~**73**, wherein the containment ~~or an extension thereof~~ serves to locate the element for emitting light closer to the light input region of the~~, or each,~~ light conducting element**, or a plurality of light conducting elements,** tha~~e~~n to ~~the major part~~**an end portion** of the containment remote from the light input region or regions.

~~40~~**75**. ~~-~~**(NEW)** The light outputting device according to claim ~~38~~**73**, further ~~incorporating~~**comprising** a reflector located relative to~~:~~ the element for emitting light and the light conducting element so as to reflect light from the element for emitting light axially into the light conducting element by way of ~~its~~**the** associated light input region.

~~41~~**76**. ~~-~~**(NEW)** The light outputting device according to claim ~~38~~**73**, ~~further incorporating a refractor located relative to: the element for emitting light and the light conducting element~~**wherein the containment is shaped** so as to refract light from the element for emitting light axially into the light conducting element by way of ~~its~~**the** associated light input region.

~~42~~**77**. ~~-~~**(NEW)** The light outputting device according to claim ~~38, wherein the containment is substantially opaque such that light can only pass out of the containment from the element for emitting light by way of the light conducting element.~~

~~43. The light outputting device according to claim 38, further incorporating heat transfer means in intimate contact with, or forming an integral part of, the containment whereby heat generated by the element for emitting light is dissipated.~~

~~44. The light outputting device according to claim 38, further incorporating heat transfer means in intimate contact with, or forming an integral part of the light conducting element whereby heat generated by the element for emitting light is dissipated.~~

~~45. The light outputting device according to claim 38~~**73**, wherein the containment serves to define a plenum about the element for emitting light whereby **one of** a vacuum ~~or~~, ain inert gas ~~or~~**and** a mixture of gases ~~to be~~**is** maintained ~~by means of the plenum~~ about the element for emitting **light**.

~~46~~**78**. ~~(NEW)~~ The light outputting device according to claim ~~38, wherein the element for emitting light is contained in an envelope within the containment and the envelope serves to define a plenum about the element for emitting light whereby a vacuum or an inert gas or a mixture of gases to be maintained by means of the envelope about the element for emitting light.~~

~~47. The light outputting device according to claim 38, further incorporating~~**73, further comprising** means for varying the color of light output by the device.

~~48~~**79**. ~~(NEW)~~ The light outputting device according to claim ~~38~~**73**, wherein the element for emitting light comprises ~~more than one light emitter so that the element for emitting light can be used to emit more than one light wavelength.~~

~~49.~~ **at least one of a resistive filament, an arc, a discharge device, a solid state emitter (PN junction), and a coherent light source with means for light stimulation and amplification.**

80. (NEW) The light outputting device according to claim ~~38, wherein the containment serves to provide location means for the device adapted for complementary engagement with an external device whereby the device can be demountably attached by means of~~**73, wherein** the light conducting element ~~or an extension thereof to a further light conducting path in a predetermined position relative to a path datum.~~

~~50.~~ **is one of fused quartz, glass and other like materials.**

81. (NEW) The light outputting device according to claim ~~38~~**73**, wherein the containment ~~comprises a housing defining a passage in which~~**is one of fused quartz, glass and other like materials.**

82. (NEW) A method of fabricating a light outputting device having a containment for housing an element for emitting light, the containment having a

longitudinal axis and a transverse width defined about the l ngitudinal axis, a light conducting lem nt communicating with and extending co-axially with the containment, the light c nducting element having an axial l ngth substantially greater than a transverse width, the light conducting element being aligned co-axially with the element for emitting light in the containment, the transverse width of the light conducting element being similar to the transverse width of the containment; and the light conducting element having a light input region whereby light generated by the element is enabled to pass axially into the light conducting element, the method comprising the steps of

providing the light conducting element ~~is located, the passage has an inner end located within the containment service as a wall of a chamber within the containment; and the chamber serves to locate the element for emitting light.~~

~~51. The light outputting device according to claim 50, wherein the housing is opaque.~~

~~52. The light outputting device according to claim 50, wherein the chamber serves to house, or has a boundary region serving to define, means for reflecting or refracting light emitted by the element for emitting light axially into the light conducting element by way of its associated~~**in the form of a longitudinal member with opposing end faces separated by an outer surface extending between the end faces;**

locating around the light conducting element a sleeve member of greater length than the light conducting element;

positioning one of the end faces of the light conducting element at or near one end of the sleeve so as to leave a length of sleeve projecting beyond the opposite end face of the light conducting element;

forming the light input region~~.~~

~~53. The light outputting device according to claim 50, wherein the containment incorporates integral fins or has in good thermal exchange contact with a member incorporating fins; and the fins serve to radiate or otherwise dissipate heat generated by the element for emitting light and transferred to the fins by way of the containment.~~

~~54. The light outputting device according to claim 50, wherein the containment includes a further passage whereby the chamber can be communicated with from outside the device to provide for one of varying the pressure in the chamber and supplying the chamber with a one of gas and vapor.~~

~~55. The light outputting device according to claim 50, wherein the containment comprises two parts demountably coupled to one another so that when uncoupled form one another the two uncoupled parts expose the interior of the chamber.~~

~~56. The light outputting device according to claim 55, wherein the two parts of the containment each provide or contain a path of electrically conducting material and when assembled the two paths are: electrically insulated from one another and coupled to the element for emitting light to enable electrical power to be supplied to the element.~~

~~57. The light outputting device according to claim 50, wherein the containment includes a further passage for a conducting means for supplying electrical power to the element for emitting light.~~

~~58. The light outputting device according to claim 57, wherein the further passage can extend one of axially along and radially from the device.~~

~~59. The light outputting device according to claim 38, wherein the element for emitting light comprises one or more of the following:~~

~~a resistive filament;~~

~~an arc;~~

~~a discharge device;~~

~~a solid state emitter (PN junction); and~~

~~a coherent light source with means for light stimulation and amplification.~~

~~60. The light outputting device according to claim 38, wherein light conducting element is of fused quartz or other glass like material.~~

~~61. The light outputting device according to claim 38, wherein the containment is of fused quartz or other glass like material.~~

~~62. A method of fabricating a light outputting device having a containment for housing an element for emitting light, the containment having a longitudinal axis and a width transverse of the longitudinal axis; a light conducting element extending axially from the containment and having an axial length substantially greater than the transverse width; the light conducting element being aligned co-axially with the element for emitting light in the containment by means of the containment or an extension thereof; the width~~ **at the opposite end face** of the light conducting element ~~being similar to the transverse width; and the light conducting element having a light input region whereby light generated by the element is enabled to pass axially into the light conducting element, wherein the steps of providing the light conducting element in the form of a longitudinal member with end faces and an outer surface apart from the end~~

~~faces; locating around the light conducting element a sleeve member of greater length than the light conducting element with a first end of the light conducting element at or near one end of the sleeve so as to leave a length of sleeve projecting beyond the opposite end of the light conducting element the first end; the opposite end of the light conducting element to the firs end forming, at least in part, the light input region;~~ causing the sleeve member to be contiguously juxtaposed with the outer surface of the light conducting element;

locating the element for emitting light in the length of sleeve projecting beyond the opposite end **face**;

deforming the length of sleeve so as to form together with the light input region of the light conducting element the containment for the element for emitting light; and

sealing the deformed length of tube to cause the containment to form a gas tight enclosure for the element for emitting light.

~~63~~**83**. ~~(~~**(NEW)** A method of fabricating a light outputting device according to claim ~~62~~ **82**, ~~wherein~~**further comprising the step of forming** the sleeve ~~is of~~**from** a similar material to the light conducting member and ~~the step of~~ causing the sleeve member to be contiguously juxtaposed with the outer surface of the light conducting element ~~comprises~~**by** a fusing operation.

~~64. A method of manufacturing a~~ **84. (NEW) A light outputting device comprising:**

a contiguous sleeve defining a communicating light source containment portion and a light wave conducting portion, the sleeve having an axial length and a substantially constant radial width defined about a longitudinal axis;

a plenum formed by the light source containment portion and the light wave conducting portion houses a light source and positions the light source adjacent a first end of the plenum defined by a light receiving surface of the light wave conducting portion, the light receiving surface of the light wave conducting portion receives light directly from the light source and passes the light along the axial length of the light wave conducting portion to a light output.

85. (NEW) The light outputting device according to claim ~~62~~**84**,~~-~~ wherein the ~~sleeve is of a translucent or opaque material having a thermal coefficient of expansion comparable with that of the light conducting member.~~

~~65. A method of manufacturing a~~**light source is located in a first end of the plenum immediately adjacent the light receiving end of the light wave conducting portion and spaced from a second remote end of the plenum.**

86. (NEW) The light outputting device according to claim ~~62~~**84**, ~~wherein the step of locating the element for emitting light in the length of sleeve projecting beyond the opposite end includes locating conductors for supplying energy to the element.~~

~~66. A method of manufacturing a~~**further comprising a reflector substantially radially surrounding the light source for directing light waves emitted by the light source axially into the light receiving end of the light wave conducting portion.**

87. (NEW) The light outputting device according to claim ~~62~~**84**, wherein the ~~step of locating~~**light source containment portion is shaped so as to refract light from** the element for emitting light ~~in the length of sleeve projecting beyond the opposite end includes locating a mirror element for reflecting light generated by the element for emitting light to enable the mirror element to be enclosed with the element for emitting light in the containment prior to the deforming and sealing steps.~~

~~67. A method of manufacturing a~~**axially into the light receiving end of the light wave conducting element.**

88. (NEW) The light outputting device according to claim ~~62, wherein the step of locating the element for emitting light in the length of sleeve projecting beyond the opposite end includes locating a lens element for refracting light generated by the element for emitting light to enable the lens element to be enclosed with the element for emitting light in~~**84, wherein the plenum defined by** the containment ~~prior to the deforming and sealing steps.~~

~~68. The array comprising at least two~~**portion about the light source maintains an environment of one of a vacuum, an inert gas and a mixture of gases about the light emitting element.**

89. (NEW) The light outputting device ~~devices,~~ according to claim ~~38 or fabricated by means of a method according to claim 62 and a light guide array linking the or at least one light conducting element to a light output location remote from at lease one device.~~

~~69. The array according to claim 68 wherein at least one of the devices is coupled to a heat exchange means whereby heat generated by the device is dissipated such as by natural or forced convection utilizing gas or liquid coolant.~~

~~70. The array according to claim 68, further incorporating in the light guide array or the light output location~~**84, further comprising** means for varying the color of light ~~originating from at least one of~~**output by** the devices.